fx-350HB

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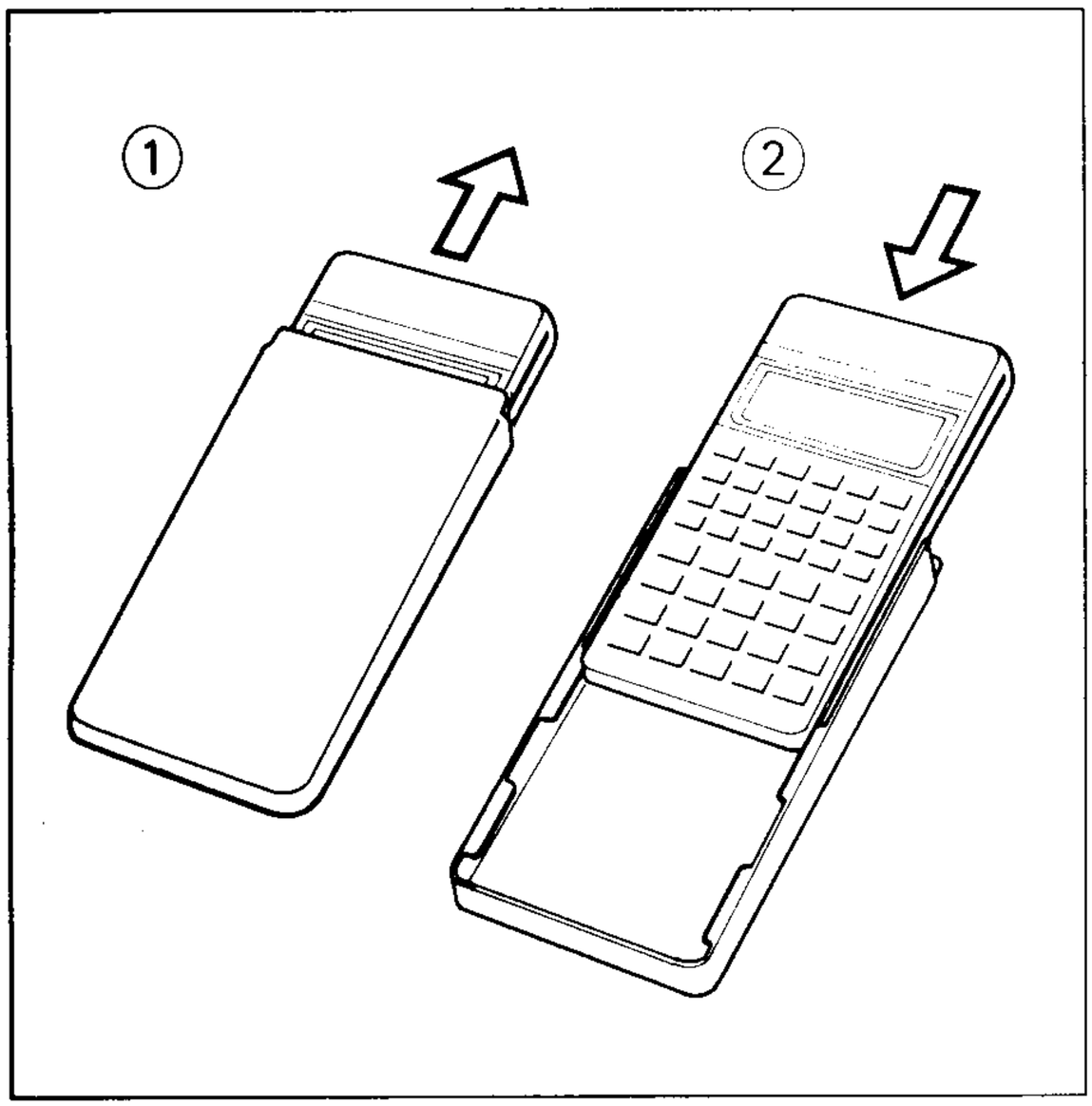
CASIO®



Handling precautions

- Your calculator is made up of precision components. Never try to take it apart.
- Avoid dropping your calculator and subjecting it to other strong impacts.
- Do not store the calculator or leave it in areas exposed to high temperatures or humidity, or large amounts of dust. When exposed to low temperatures, the calculator may require more time to display results and may even fail to operate. Correct operation will resume once the calculator is brought back to normal temperature.
- The display will go blank and keys will not operate during calculations. When you are operating the keyboard, be sure to watch the display to make sure that all your key operations are being performed correctly.
- Never leave dead batteries in the battery compartment. They can leak and damage the unit.
- Avoid using volatile liquids such as thinner or benzine to clean the unit. Wipe it with a soft, dry cloth, or with a cloth that has been dipped in a solution of water and a neutral detergent and wrung out.
- In no event will the manufacturer and its suppliers be liable to you or any other person for any damages, expenses, lost profits, lost savings or any other damages arising out of loss of data and/or formulas arising out of malfunction, repairs, or battery replacement. The user should prepare physical records of data to protect against such data loss.
- Never dispose of batteries, the liquid crystal panel, or other components by burning them.
- Before assuming malfunction of the unit, be sure to carefully reread this manual and ensure that the problem in not due to insufficient battery power or operational errors.

KEY INDEX

	Page		Page		Page		Page		Page		Page
SHIFT				x^2	160	10^x	158	e^x	158		
[ ]	5	MODE	6	√	160	log	157	ln	158	OFF	5
d/c	142	←	152			$\sin^{-1}$	156	$\cos^{-1}$	155	$\tan^{-1}$	155
$a\frac{b}{c}$	138	°,,,	152	hyp	155	sin	154	cos	154	tan	154
$\sqrt[3]{\ }$	160	←	163	X↔Y	130	X↔M	137	$1/x$	154	$x!$	161
+/−	8	ENG	163	((•••	6 / 10	•••))	10	Min	134	MR	137

$\bar{x}$	175	σ_n	175	σ_{n-1}	174			SAC	ON 170		
7	130	8	130	9	133	C	11	AC	5		
Σx^2	176	Σx	175	n	175	x^y	159	$x^{1/y}$	159		
4	129	5	129	6	129	×	129	÷	129		
$n\,Pr$	167	$n\,Cr$	169			R→P	165	P→R	166		
1	129	2	129	3	129	+	129	−	129		
RND	162	RAN #	163	π	154	%	144	M−	137		
0	129	•	129	EXP	8	=	129	M+	137		
							174	DATA	DEL 178		

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1/GENERAL GUIDE

1-1 Power ON/OFF

To turn your unit on, press [AC ON].
To turn your unit off, press [OFF].

Auto power-off function

This unit automatically switches off if not operated for approximately 6 minutes. Power can be restored by pressing the [AC ON] key. Memory contents and mode setting are retained even when power is switched off.

1-2 The keyboard

Many of the calculator's keys are used to perform more than one function. The functions marked on the keyboard are color coded to help you find the one you need quickly and easily.

Shifted function → 10^x
Primary function → [log]

SD mode function → $\bar{x}$
Primary function → [7]

Primary functions

These are the functions that are normally executed when you press the key.

Shifted functions

You can execute these functions by first pressing the [SHIFT] key, followed by the key that is assigned the shifted function you want to execute.

SD mode functions

You can execute these functions in the SD mode.

1-3 Modes

When using this calculator, it is necessary to select the proper mode to suit your calculation requirements. This can be done by using the [MODE] key in combination with the number keys. (Refer to plate below the display.)

[MODE][•]: **SD is displayed.** Standard deviation calculation.

[MODE][0]: **COMP mode.** General calculations, including function calculations.

[MODE][4]: **DEG is displayed.** Specifies measurement in "degrees".

[MODE][5]: **RAD is displayed.** Specifies measurement in "radians".

[MODE][6]: **GRA is displayed.** Specifies measurement in "grads".

[MODE][7]: **FIX is displayed.** Specifies number of decimal places from 0 to 9.

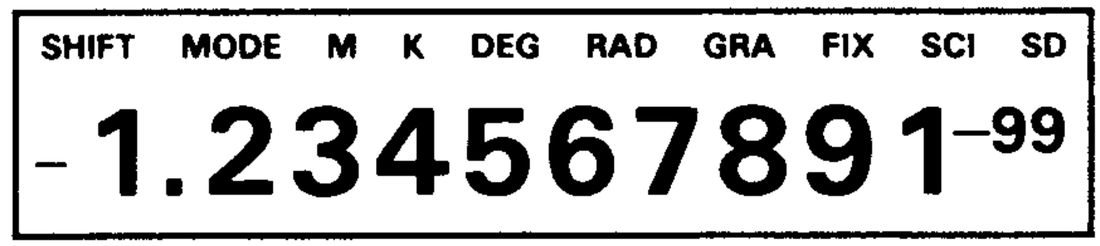
[MODE][8]: **SCI is displayed.** Specifies number of significant digits 1 to 10.

[MODE][9]: **Cancels "FIX" and "SCI" specifications.** This operation also changes the range of the exponent display (see page 7).

- You can use [MODE][4] through [MODE][6] in combination with the COMP Mode and SD Mode. The unit of angular measurement is retained when you switch power off.
- Make sure you press the [AC] key before making [MODE][4] through [MODE][6] settings.

1-4 Display symbols

Indicators appear on the display to show you the current status of the calculator.



–E– or –C–:	Error indicators
SHIFT:	[SHIFT] key pressed
MODE:	[MODE] key pressed
M:	Independent memory indicator
K:	Constant calculation indicator
DEG or RAD or GRA:	Angular unit
FIX:	Number of decimal places specified
SCI:	Number of significant digits specified
SD:	Standard deviation calculation

1-5 Exponential displays

During normal calculation, this calculator is capable of displaying up to 10 digits. Values that exceed this limit, however, are automatically displayed in exponential format. You can choose between 2 different types of exponential display formats.

NORM 1 mode:

10^{-2} (0.01) > $|x|$, $|x| \geqq 10^{10}$

NORM 2 mode:

10^{-9} (0.000000001) > $|x|$, $|x| \geqq 10^{10}$

You can select between the NORM 1 and NORM 2 mode by pressing [MODE][9]. There is no indication of which mode is currently in effect, but you can confirm the mode by performing the following calculation.

1 ÷ 200 =

5.$^{-03}$	(NORM 1 mode)
0.005	(NORM 2 mode)

(All of the example in this manual show calculation results using the NORM 1 mode.)

How to interpret exponential format

1.2 ^{11}

➡1.2×10^{11} ➡120,000,000,000

1.2^{11} indicates that the result is equivalent to 1.2×10^{11}. This means that you should move the decimal point in 1.2 eleven places to the right, since the exponent is positive. This results in the value 120,000,000,000.

1.2^{-03}

➡1.2×10^{-3} ➡0.0012

1.2^{-03} indicates that the result is equivalent to 1.2×10^{-03}. This means that you should move the decimal point in 1.2 three places to the left, since the exponent is negative. This result in the value 0.0012.

*Entry can be made in scientific notation by using the [EXP] key after entering the mantissa.

EXAMPLE	OPERATION	READ-OUT
$-1.234567891 \times 10^{-3}$		
$(= -0.001234567891)$		
	1 [.] 234567891 [+/-]	−1.234567891
	[EXP]	−1.234567891 ^{00}
	3 [+/-]	−1.234567891 $^{-03}$

1-6 Special display formats

Special display formats are used for the representation of fraction and sexagesimal values.

Fraction value display

456⌟12⌟23.

Display of $456\frac{12}{23}$

Sexagesimal value display

12°34°56.78

Display of 12°34'56.78''

Before assuming a problem with your calculator...

If the result produced by the calculator is not what you expect or if an error occurs, perform the following operation to initialize the calculator.

1. [MODE] [0] (COMP mode)
2. [MODE] [4] (DEG mode)
3. [MODE] [9] (NORM mode)
4. Check the formula you are working with to confirm that it is correct.
5. Enter the correct modes to perform your calculation and try again.

2/ORDER OF OPERATIONS AND LEVELS

Operations are performed in the following order of precedence:

1. Functions
2. x^y, $x^{1/y}$, R→P, P→R, nPr, nCr
3. ×, ÷
4. +, −

Operations with the same precedence are performed from left to right, with operations enclosed in parentheses performed first. If parentheses are nested, the operations enclosed in the innermost set of parentheses are performed first.

*Registers L_1 through L_6 are provided to store operations of lower precedence (including parenthetical operations). Since six registers are provided, calculations up to six levels can be retained.

*Since each level can contain up to three open parentheses, parantheses can be nested up to 18 times.

Example (4 levels, 5 nested parentheses)

Operation

2 × (((3 + 4 × ((5 + 4) ÷ 3))

1 level 1 level 1 level 1 level A

÷ 5) + 9) =

Register contents at point A.

x	4
L_1	[([(5 +
L_2	4 ×
L_3	[([([(3 +
L_4	2 ×
L_5	
L_6	

3/CORRECTIONS

If you notice you've made a mistake when inputting a number (but you have not yet pressed an arithmetic operator key), just press C to clear the last value and then input it again.

In a series of calculations, you can correct errors in intermediate results by pressing C to clear the last calculation performed. You can then continue with the calculation.

If you want to change input of the +, −, ×, ÷, SHIFT x^y, or SHIFT $x^{1/y}$ operator key, simply press the operator key you want to change to. In this case, the most recently pressed key operation is used, but the operation retains the order of precedence of the original operation you input.

4/OVERFLOW OR ERROR CHECK

An overflow or error is indicated and further calculation becomes impossible when the symbol "–E–" or "–[–" appears on the display. An overflow or error occurs when any of the following conditions occur.

a) When a result (whether intermediate or final) or accumulated total in the memory is more than $\pm(9.999999999 \times 10^{99})$ ("–E–" sign appears).
b) When function calculations are performed with a number exceeding the input range ("–E–" sign appears).
c) When an unreasonable operation (such as an attempt to calculate $\bar{x}$ and σn while $n=0$) is performed during statistical calculations ("–E–" sign appears).
d) When a mathematically illegal operation (such as division by zero: $6 \div 0$) is performed ("–E–" sign appears).
e) When the total number of levels of explicitly and/or implicitly nested parentheses exceeds 6, or when more than 18 pairs of parentheses are used ("–[–" sign appears).

Ex.) Pressing the [(•••] key 18 times before inputting 2 [+] 3 [×].

To release these overflow checks:

a), b), c), d) ..... Press the [AC] key.
e) ..... Press the [AC] key. Or press the [C] key and the intermediate result just before the overflow appears and the subsequent calculation can then be performed.

*If the result is within the range of $+(1 \times 10^{-99})$ to $-(1 \times 10^{-99})$, an error does not occur. Instead, the display shows all zeros.

5/POWER SUPPLY

The fx-350HB powered by one CR2032 battery. As the battery power weakens, the characters on the display become dim and difficult to read. When this happens, replace the battery as soon as possible.

Precautions!

Incorrectly using batteries can cause them to burst or leak, possibly damaging the interior of the unit. Note the following precautions:

- Be sure that the positive (+) and negative (–) poles of the battery are facing in the proper direction.
- Never leave a dead battery in the battery compartment.
- Remove the battery if you do not plan to use the unit for long periods.
- Replace the battery at least once every 5 years, no matter how much the unit is used during that period.
- Never try to recharge the battery supplied with the unit.
- Do not expose batteries to direct heat, let them become shorted, or try to take them apart.

(Keep batteries out of the reach of small children. If swallowed, consult with a physician immediately.)

To replace battery

1. Press [OFF] to switch power off.
2. Remove the screws that hold the back cover in place, and then remove the cover.
3. Remove the old battery.
4. Install new battery with polarity in correct directions.
5. Replace the back cover and secure it in place with the screws.
6. Press [AC ON] to switch power on.

Note
The calculator automatically resets its memory whenever batteries are removed for longer than two or three minutes. The following are the initial settings of the calculator whenever its memory is reset.
- COMP mode
- DEG mode
- NORM1 mode
- Memory cleared
- Input buffer cleared

Important!
If you allow battery power to drop too low, memory contents may become corrupted or lost completely. Be sure to replace the battery as soon as you notice the display becoming dim.

6/SPECIFICATIONS

BASIC OPERATIONS
4 basic calculations, constants for $+/-/\times/\div/x^y/x^{1/y}$, parenthesis calculations and memory calculations.

BUILT-IN FUNCTIONS
Trigonometric/inverse trigonometric functions (with angle in degrees, radians or grads), hyperbolic/inverse hyperbolic functions, common/natural logarithms, exponential functions (common antilogarithms, natural antilogarithms), powers, roots, square roots, cube roots, squares, reciprocals, factorials, conversions of coordinate system (R→P, P→R), random numbers, π, permutations, combinations, fractions and percentages.

STATISTICAL FUNCTIONS
Population standard deviation, sample standard deviation, arithmetic mean, sum of square value, sum of value and number of data.

CAPACITY
Entry/basic calculations
10-digit mantissa, or 10-digit mantissa plus 2-digit exponent up to $10^{\pm 99}$.

***Output accuracy**
± 1 in the 10th digit

Functions	Input range	
sin$x$ cos$x$ tan$x$	(DEG) $\lvert x\rvert < 9\times10^{9}$° (RAD) $\lvert x\rvert < 5\times10^{7}\pi$rad (GRA) $\lvert x\rvert < 1\times10^{10}$grad	However, for tan x: $\lvert x\rvert \neq 90(2n+1)$: DEG $\lvert x\rvert \neq \pi/2(2n+1)$: RAD $\lvert x\rvert \neq 100(2n+1)$: GRA
$\sin^{-1}x$ $\cos^{-1}x$	$\lvert x\rvert \leqq 1$	
$\tan^{-1}$	$\lvert x\rvert < 1\times10^{100}$	
sinh$x$ cosh$x$	$\lvert x\rvert \leqq 230.2585092$	Note: For sinh and tanh, when $x=0$, errors are cumulative and accuracy is affected at a certain point.
tanh$x$	$\lvert x\rvert < 1\times10^{100}$	

Functions	Input range
$\sinh^{-1}x$	$\lvert x\rvert < 5\times10^{99}$
$\cosh^{-1}x$	$1 \leqq x < 5\times10^{99}$
$\tanh^{-1}x$	$\lvert x\rvert < 1$
$\log x/\ln x$	$1\times10^{-99} \leqq x < 1\times10^{100}$
10^x	$-1\times10^{100} < x < 100$
e^x	$-1\times10^{100} < x \leqq 230.2585092$
$\sqrt{x}$	$0 \leqq x < 1\times10^{100}$
x^2	$\lvert x\rvert < 1\times10^{50}$
$1/x$	$\lvert x\rvert < 1\times10^{100}$, $x \neq 0$
$\sqrt[3]{x}$	$\lvert x\rvert < 1\times10^{100}$
$x!$	$0 \leqq x \leqq 69$ (x is an integer)
$n\,Pr$ $n\,Cr$	n, r (n and r are integers) $0 \leqq r \leqq n$, $n < 1\times10^{10}$
Pol (x, y)	$\sqrt{x^2+y^2} < 1\times10^{100}$
Rec (r, θ)	$0 \leqq r < 1\times10^{100}$ (DEG) $\lvert\theta\rvert < 9\times10^{9}$° (RAD) $\lvert\theta\rvert < 5\times10^{7}\pi$rad (GRA) $\lvert\theta\rvert < 1\times10^{10}$grad However, for tan θ: $\lvert\theta\rvert \neq 90(2n+1)$: DEG $\lvert\theta\rvert \neq \pi/2(2n+1)$: RAD $\lvert\theta\rvert \neq 100(2n+1)$: GRA
°′ ″	$\lvert a\rvert$, b, c $< 1\times10^{100}$, $0 \leqq$ b, c
←°′ ″	$\lvert x\rvert \leqq 2.777777777\times10^{96}$
x^y	$x>0$: $-1\times10^{100} < y\log x < 100$ $x=0$: $y>0$ $x<0$: $y=n, \frac{1}{2n+1}$ (n is an integer) However; $-1\times10^{100} < y\log\lvert x\rvert < 100$
$x^{1/y}$	$x>0$: $y \neq 0$ $-1\times10^{100} < \frac{1}{y}\log x < 100$ $x=0$: $y>0$ $x<0$: $y=2n+1, \frac{1}{n}$ ($n \neq 0$, n is an integer) However; $-1\times10^{100} < \frac{1}{y}\log\lvert x\rvert < 100$

Functions	Input range
$a\,{}^{b}/_{c}$	•Results Total of integer, numerator and denominator must be within 10 digits (includes division marks). •Input Result displayed as fraction for integer when integer, numerator and denominator are less than 1×10^{10}.
SD	$\lvert x\rvert < 1\times10^{50}$ $\lvert n\rvert < 1\times10^{100}$ $x\sigma n$, $\bar{x}$: $n \neq 0$ $x\sigma n-1$: $n \neq 0, 1$

*Errors are cumulative with such internal continuous calculations as x^y, $x^{1/y}$, $x!$, $\sqrt[3]{\ }$ so accuracy may be adversely affected.

DECIMAL POINT

Full floating with underflow.

EXPONENTIAL DISPLAY

Norm 1 – $10^{-2} > \lvert x\rvert$, $\lvert x\rvert \geqq 10^{10}$

Norm 2 – $10^{-9} > \lvert x\rvert$, $\lvert x\rvert \geqq 10^{10}$

READ-OUT

Liquid crystal display, suppressing unnecessary 0's (zeros).

POWER SOURCE

Power source: One lithium battery (CR2032)

Battery life*: The unit gives approximately 2,000 hours continuous operation

Power consumption: 0.0004W

AMBIENT TEMPERATURE RANGE

0°C – 40°C (32°F – 104°F)

DIMENSIONS

13.5mmH × 78mmW × 141.8mmD
(1/2″H × 3 1/8″W × 5 17/32″D)

WEIGHT

79g (2.8 oz) including battery

*The battery that comes installed in this unit when you purchase it is for factory test purposes, so they will probably not provide normal service life.

7/NORMAL CALCULATIONS

*You can perform normal calculations in the COMP mode (MODE 0).
*Calculations can be performed in the same sequence as the written formula (true algebraic logic).
*Nesting of up to 18 parentheses at 6 levels is allowed.

7/CALCULOS NORMALES

*Se pueder realizan cálculos normales en el modo COMP (MODE 0).
*Los cálculos se pueden hacer en la misma secuencia de la fórmula introducida (lógica algebraica verdadera).
*Se permite el establecimiento de hasta 18 parentesis en 6 niveles.

7/CALCULS NORMAUX

*Les calculs normaux peuvent être effectués dans le mode COMP (MODE 0).
*Les calculs peuvent être effectués dans le même ordre que la formule écrite (vraie logique algébrique).
*L'imbrication de 18 parenthèses en 6 niveaux est possible.

7/一般計算

*您可以在COMP狀態(MODE 0)時實行一般計算。
*計算可依計算式的順序實行(代數邏輯)。
*括弧可以用至6層次18個。

7/표준계산법

*COMP 방식하에서 표준계산을 행할 수가 있습니다 (MODE 0).
*가입되어져 있는 방식과 같은 순서로 계산이 행하여 집니다 (대수적 논리).
*6 단계로 18개의 삽입절의 계산을 최대치로 수용할 수 있습니다.

7/PERHITUNGAN BIASA

*Anda dapat melangsungkan perhitungan biasa dalam mod COMP ([MODE] [0]).
*Perhitungan dapat dilangsungkan dalam urutan yang sama dengan rumus yang tertulis (logika aljabar yang benar).
*Perhitungan 18 tanda kurung dengan 6 tingkatan beruntun dapat digunakan.

7/CÁLCULOS NORMAIS

*Você pode fazer cálculos normais no modo COMP ([MODE] [0]).
*Os cálculos podem ser efetuados na mesma seqüência da fórmula escrita (lógica algébrica real).
*É possível agrupar até 18 parênteses em 6 níveis.

٧/عمليات الحساب العادية

* يمكنك إجراء عمليات الحساب العادية فى الوضع COMP (المفتاح [MODE] [0]).
* يمكنك إجراء عمليات الحساب بنفس التتابع كما فى المعادلات المكتوبة (المنطق الجبرى الحقيقى).
* يسمح بتداخل حتى ١٨ قوس عند ٦ مستويات.

7-1 Four basic calculations (incl. parenthesis calculations)

7-1 Cuatro cálculos básicos (incluidos los cálculos con paréntesis)

7-1 Quatre calculs élémentaires (y compris les calculs avec parenthèses)

7-1 四則運算(包含括弧的運算)

7-1 4가지 기본적 계산기능(삽입절도 포함)

7-1 Empat perhitungan dasar (termasuk perhitungan dalam kurung)

7-1 Quatro cálculos básicos (incluindo cálculos com parênteses)

٧ - ١ عمليات الحساب الأساسية الأربعة (مشتملة على حسابات الأقواس)

EXAMPLE	OPERATION	READ-OUT
EJEMPLO	OPERACION	LECTURA
EXEMPLE	OPERATION	AFFICHAGE
例 題	操 作	顯 示
표본	작동	정보판독
CONTOH	OPERASI	HASIL
EXEMPLO	OPERAÇÃO	LEITURA
مثال	التشغيل	العرض

$23 + 4.5 - 53 =$

23 [+] 4 [.] 5 [−] 53 [=] | −25.5

$56 \times (-12) \div (-2.5) =$

56 [×] 12 [+/−] [÷] 2 [.] 5 [+/−] [=] | 268.8

$2 \div 3 \times (1 \times 10^{20}) =$

2 [÷] 3 [×] 1 [EXP] 20 [=] | 6.666666667 19

$(2 + 3) \times 10^{2} =$

[(] 2 [+] 3 [)] [×] 1 [EXP] 2 [=] | 500.

*The correct answer cannot be derived by entering [(] 2 [+] 3 [)] [EXP] 2. Be sure to enter [×] 1 between [)] and [EXP] in the above example.

*La respuesta correcta no puede derivarse ingresando [(] 2 [+] 3 [)] [EXP] 2. Cerciórese de ingresar [×] 1 entre el [)] y [EXP] en el ejemplo anterior.

*La réponse correcte ne peut pas être obtenue en introduisant [(] 2 [+] 3 [)] [EXP] 2. Toujours introduire [×] 1 entre [)] et [EXP] dans l'exemple ci-dessus.

* 當以 [(•••] 2 [+] 3 [•••)] [EXP] 2 輸入時無法得到正確答案。在上面的例子中，請務必要將 [×] 1 輸入至 [•••)] 和 [EXP] 之間的位置。

* [(•••] 2 [+] 3 [•••)] [EXP] 2 를 입력하면 정확한 해답이 유도될 수 없다. 위의 보기에서 [×] 1 키와 [•••)] 키 사이에 [EXP] 를 입력해야 합니다.

* Jawaban yang benar tidak dapat diturunkan dengan memasukkan [(•••] 2 [+] 3 [•••)] [EXP] 2. Pastikan untuk memasukkan [×] 1 diantara [•••)] dan [EXP] pada contoh diatas.

* A resposta correta não poderá ser produzida com a seqüência [(•••] 2 [+] 3 [•••)] [EXP] 2. Certifique-se de entrar [×] 1 entre [•••)] e [EXP] no exemplo acima.

* لا يمكن ان تحصل على الاجابة الصحيحة بادخال [(•••] 2 [+] 3 [•••)] [EXP] 2 . تأكد من ادخال علامة الضرب [×] والرقم 1 بين القوس [•••)] والعلامة [EXP] فى المثال السابق.

$\underline{7\times8}-\underline{4\times5}=(56-20)=$

7 [×] 8 [−] 4 [×] 5 [=] | 36. |

$1+2-\underline{3\times4\div5}+6=$

1 [+] 2 [−] 3 [×] 4 [÷] 5 [+] 6 [=] | 6.6 |

$\dfrac{6}{4\times5}=$

4 [×] 5 [÷] 6 [SHIFT] [X↔Y] [=] | 0.3 |

* Be sure to press [AC] before starting any operation that involves the [(•••] key. This is especially true right after you finish performing calculations that are finalized without pressing [=] (such as scientific function calculations).
* The number of levels of the [(•••] key can be displayed.

* Cerciórese de presionar [AC] antes de comenzar cualquier operación que relacióne la tecla [(•••]. Esto es especialmente cierto luego de la realización de cálculos, que son finalizados sin presionar la tecla [=] (tal como los cálculos de funciones científicas).
* El número de niveles de la tecla [(•••] puede presentarse en pantalla.

* Ne pas oublier d'appuyer sur [AC] avant de commencer une opération qui implique la touche [(•••]. C'est particulièrement valable lorsque l'on termine des calculs qui sont finalisés sans appuyer sur [=] (tels les calculs des fonctions scientifiques).
* Le nombre de niveaux de la touche [(•••] peut être affiché.

* 在您進行任何有關 [(•••] 鍵的操作之前，請務必先按 [AC] 鍵。尤其是在進行某些最後不是以按 [=] 鍵作結束的計算(例如進行科學計算功能的計算)時，更需確實執行。
* [(•••] 鍵的層數可以顯示出來。

* 키 [(•••] 를 포함하는 어떤 조작을 스타트하기 전에 [AC] 를 누르는 것을 확인하십시오. 이것은 특히 [=] (과학적 관수의 계산과 같은)를 누르지 않고 완결되는 계산의 수행을 끝낸 바로 뒤에 그렇게 해야 합니다.
* [(•••] 키 방식에서의 숫자는 전시가합니다.

* Pastikan untuk menekan [AC] sebelum memulai salah satu pengoperasian yang melibatkan tombol [(•••]. Hal ini terutama berlaku tepat setelah anda selesai melakukan perhitungan yang berakhir tanpa menekan [=] (misalnya perhitungan fungsi ilmiah).
* Jumlah tahapan dari tombol [(•••] dapat ditayangkan.

* Certifique-se de pressionar [AC] antes de iniciar qualquer operação que envolva a tecla [(•••]. Isso é especialmente importante depois de terminar os cálculos que são finalizados sem o acionamento de [=] (como os cálculos de funções científicas).
* O número de níveis da tecla [(•••] pode ser exibido.

* تأكد من ضغط الزر [AC] قبل البدء فى اى عملية، والذى يشتمل على الزر [(•••] . وبعد انتهائك من اداء الحسابات سوف تحصل على النتائج بدون الضغط على الزر [=] وتعتبر هذه حقائق خاصة. (مثل حسابات العلاقات العلمية).
* يمكن عرض عدد مستويات المفتاح [(•••] .

$2\times\{7+6\times(5+4)\}=$

2 [×] [(•••]	[01	0.
7 [+] 6 [×] [(•••]	[02	0.
5 [+] 4 [•••)] [•••)] [=]		122.

*It is unnecessary to press the [M] key before the [=] key.

*Es innecesario presionar la tecla [M] antes de la tecla [=].

*Il est inutile d'appuyer sur la touche [M] avant d'appuyer sur la touche [=].

*在[=]之前不需要按[M]鍵。

*[=]키를 누르기 전에 [M] 키를 누르는 것은 불필요합니다.

*Tidak perlu menekan tombol [M] sebelum tombol [=].

*Não é preciso pressionar a tecla [M] antes da tecla [=].

* ليس من الضرورى ضغط المفتاح [M] قبل المفتاح [=]

$10-\{2+7\times(3+6)\}=$

10 [−] [(M)] 2 [+] 7 [×] [(M)] 3 [+] 6 [=] → −55.

Another operation:
Otra operación:
Autre manière de faire:
其他操作:
또 다른 조작.
Operasi lain:
Uma outra operação:
تشغيل آخر:

10 [−] [(M)] 2 [+] 7 [×] [(M)] 3 [+] 6 [M] [M] [=]

7-2 Constant calculations

*The "K" sign appears when a number is set as a constant.

7-2 Cálculos con constantes

*El signo "K" aparece cuando se establece una constante.

7-2 Calculs avec constante

*Le signe "K" apparaît sur l'affichage quand un nombre est véglé comme constante.

7-2 常數計算

*當設定有常數時"K"記號會顯示出來。

7-2 불변수 계산기능

*숫자가 정수로 입력되어질 때는 "K" 표시가 나타납니다.

7-2 Perhitungan tetapan

*Tanda "K" tampak jika suatu bilangan ditentukan sebagai tetapan.

7-2 Cálculos de constantes

*O sinal "K" aparecerá quando um número for designado como uma constante.

٧ – ٢ عمليات حساب الثوابت

* تظهر العلامة "K" عند ضبط رقم كثابت.

$12+23=$

$(-78)+23=$

23 [+] [+] 12 [=] → K 35.

78 [±] [=] → K −55.

$2.3\times12=$

$(-4.56)\times12=$

12 [×] [×] 2 [·] 3 [=] → K 27.6

4 [·] 56 [±] [=] → K −54.72

$78\div9.6=$

$45\div9.6=$

9 [·] 6 [÷] [÷] 78 [=] → K 8.125

45 [=] → K 4.6875

$17+17+17+17=$

17 ⊞⊞⊟	K 34.
⊟	K 51.
⊟	K 68.

$1.7^2=$
$1.7^3=$
$1.7^4=$

1 ⊡ 7 ⊠⊠⊟	K 2.89
⊟	K 4.913
⊟	K 8.3521

$\underline{3\times6\times}4=$
$\underline{3\times6\times}(-5)=$

3 ⊠ 6 ⊠⊠	K 18.
4 ⊟	K 72.
5 ⊡ ⊟	K −90.

$\dfrac{56}{4\times(2+3)}=$

$\dfrac{23}{4\times(2+3)}=$

4 ⊠ ⊞ 2 ⊞ 3 ⊞ ÷÷	K 20.
56 ⊟	K 2.8
23 ⊟	K 1.15

7-3 Memory calculations

*Be careful not to set the function mode at "SD" when performing memory calculations.
*When a new number is entered into the memory by Min key, the previous number stored is automatically cleared and the new number is put in the memory.
*To clear the contents press 0 Min or AC Min in sequence.
*The "M" sign appears when a number is stored in the memory.

7-3 Cálculos con memoria

*Cuidar de no ajustar el modo de función en la posición "SD" cuando se realicen cálculos con memoria.
*Al introducir un número en la memoria por medio de la tecla Min, el número almacenado anteriormente es borrado automáticamente y el nuevo número es introducido en la memoria.
*Para borrar el contenido, presionar 0 Min ó AC Min en esa secuencia.
*El signo "M" aparece cada vez que se almacena un número en la memoria.

7-3 Calculs avec mémoire

*Lors de l'exécution de calculs avec mémoire, prendre garde à ne pas sélectionner le mode "SD".
*Quand un nouveau nombre est entré dans la mémoire par la touche Min, le nombre précédemment sauvegardé est automatiquement effacé.
*Pour effacer le contenu de la mémoire, appuyer dans l'ordre sur 0 Min ou AC Min.
*Le signe "M" est affiché quand un nombre est sauvegardé dans la mémoire.

7-3 記憶計算

* 當您預備作記憶計算時請注意切勿設定在"SD"狀態。
* 當一個新的數值藉按下 Min 鍵的操作被輸入至記憶器時，原來在記憶器內的數值便會被新的數值所取代而自動消除。
* 依按下 0 Min 或 AC Min 鍵的順序便可將記憶器的內容消除。
* 當一數值業已被存入記憶器時，顯示幕會有"M"記號的表示。

7-3 메모리 계산

*메모리 계산을 행할때 "SD"에 있는 기능모우드를 셋트하지 않도록 주의하십시오.
*새 수자가 [Min]키에 의하여 메모리에 입력될때 기억된 앞의 수자는 자동적으로 크리어되며 새 수자가 메모리에 입력됩니다.
*내용을 크리어하자면 [0][Min] 또는 [AC][Min]을 차례로 누르십시오.
*수자가 메모리에 기억될때 기호 "M"가 나타납니다.

7-3 Perhitungan memori

*Harap berhati-hati, jangan menyetel mod pada mod "SD" ketika melakukan perhitungan memori.
*Jika sebuah bilangan baru dimasukkan ke dalam memori melalui tombol [Min], maka nilai yang tersimpan sebelumnya secara otomatis akan terhapus dan bilangan baru tersimpan dalam memori.
*Untuk menghapus isi memori, tekan [0][Min] atau [AC][Min] berurutan.
*Tanda "M" akan tampak ketika sebuah bilangan tersimpan dalam memori.

7-3 Cálculos da memória

*Tome cuidado para não colocar o modo de função em "SD" quando realizar cálculos da memória.
*Quando um novo número for entrado na memória pela tecla [Min], o número previamente armazenado será automaticamente apagado e o novo número será colocado na memória.
*Para apagar o conteúdo da memória, pressione [0][Min] ou [AC][Min] em seqüência.
*O sinal "M" aparecerá quando um número for armazenado na memória.

٧ – ٣ عمليات حساب الذاكرة

* كن حريصا على عدم ضبط وضع التشغيل على الوضع " SD " عند إجراء عمليات حساب الذاكرة.
* عند إدخال رقم جديد فى الذاكرة بواسطة المفتاح [Min] ، يتم إزالة الرقم المخزن من قبل أوتوماتيكيا ويوضع الرقم الجديد فى الذاكرة.
* لازالة محتويات الذاكرة إضغط المفتاحين [0][Min] أو [AC][Min] بالتتابع.
* تظهر علامة الذاكرة " M " عندما يتم تخزين رقم فى الذاكرة.

53 + 6 =
23 − 8 =
56 × 2 =
+) 99 ÷ 4 =
210.75

53 [+] 6 [=] [Min]	M 59.
23 [−] 8 [M+]	M 15.
56 [×] 2 [M+]	M 112.
99 [÷] 4 [M+]	M 24.75
[MR]	M 210.75

7 + 7 − 7 + (2 × 3) + (2 × 3) + (2 × 3) − (2 × 3) =

7 [Min] [M+] [SHIFT] [M−] 2 [×] 3 [M+] [M+] [M+] [SHIFT] [M−] [MR]	M 19.

12 × 3 =
−) 45 × 3 =
78 × 3 =
135

3 [×] [×] 12 [=] [Min]	M K 36.
45 [SHIFT] [M−]	M K 135.
78 [M+]	M K 234.
[MR]	M K 135.

*When the [X↔M] key is pressed after the [SHIFT] key, the displayed number is exchanged with the content of the memory.

*Cuando se presiona la tecla [X↔M] luego de la tecla [SHIFT], el número en pantalla es intercambiado con el contenido de la memoria.

*Quand on appuie sur la touche [X↔M] après avoir appuyé sur la touche [SHIFT], le nombre affiché est échangé avec le contenu de la mémoire.

* 在按 [SHIFT] 鍵之後若按 [X↔M] 鍵，則顯示幕上所顯示的數值會被切換成記憶器內記存的數值。

* [SHIFT] 키에 뒤이어 [X↔M] 키를 누르면 표시된 수자는 메모리의 내용으로 바꾸어집니다.

*Jika tombol [X↔M] ditekan setelah tombol [SHIFT], maka nilai tampilan akan ditukar dengan isi memori.

*Quando a tecla [X↔M] for pressionada depois da tecla [SHIFT], o número exibido será trocado pelo conteúdo da memória.

* عند ضغط المفتاح [X↔M] بعد المفتاح [SHIFT] ، يتم تبديل الرقم المعروض مع محتويات الذاكرة.

$$\frac{(3+6)\times(2+5)}{\{2\times(3+4)\}+\{6\times(7+8)\}}=$$

[(] 3 [+] 6 [)] [×] [(] 2 [+] 5 [)] [=] [Min]

M
63.

2 [×] [(] 3 [+] 4 [)] [+] [(] 6 [×] [(] 7 [+] 8 [)] [)] [=]

M
104.

[SHIFT] [X↔M] [÷] [MR] [=]

M
0.6057692308

7-4 Fraction calculations

*Total of integer, numerator and denominator must be within 10 digits (includes division marks).
*A fraction can be transferred to the memory.
*When a fraction is extracted, the answer is displayed as a decimal.
*A press of [a b/c] key after the [=] key converts the fraction answer to the decimal scale.

7-4 Cálculos de fracciones

*Total de números enteros, numerador y denominador deben estar dentro de 10 dígitos (incluyendo las marcas de división).
*Una fracción puede ser transferida a la memoria.
*Cuando se extrae una fracción, la respuesta es presentada como decimal.
*La pulsación la tecla [a b/c] después de la tecla [=], convierte las fracciones a la escala decimal.

7-4 Calculs de fraction

*Le total du chiffre entier, du numérateur et du dénominateur ne doit pas dépasser 10 chiffres (y compris les signes de division).
*Une fraction peut être transférée dans la mémoire.
*Quand une fraction est extraite, la réponse est affichée comme un nombre décimal.
*Une pression sur la touche [a b/c] après la touche [=] convertit la réponse fractionnelle à l'échelle décimale.

7-4 分數計算

整數、分子和分母合起來的數位必須在10位以內（包括除號在內）。

* 分數可以轉存入記憶體中。
* 將分數開方求根時，答案會以小數表示。
* 在按 [=] 鍵之後再按 [a b/c] 鍵時，分數會換算成小數的數值。

7-4 소숫점 계산기능

*정수, 분자, 분모의 합계는(나눗셈 표시를 포함하여) 10개 이내의 유효숫자여야 합니다.
*소숫점 계산은 기억장치에 옮겨지는 것이 가능함.
*소숫점 계산이 추출되어졌을때, 계산의 결과는 소수로 표시됩니다.
*[=] 키를 누른 후에 [a b/c] 키를 누르면, 소숫점 계산의 결과가 십진법 단위로 변환되어 집니다.

7-4 Perhitungan pecahan

*Banyaknya bilangan bulat, pembilang dan penyebut harus berada didalam 10 digit (termasuk tanda bagi).
*Sebuah pecahan dapat ditransfer ke dalam memori.
*Jika sebuah pecahan diringkas, maka jawaban ditampilkan sebagai desimal.
*Tekan tombol [a⁄c] setelah [=] untuk mengkonversikan hasil pecahan ke dalam skala desimal.

7-4 Cálculos fracionários

*O total do número inteiro, numerador e denominador deve estar dentro de 10 dígitos (incluindo as marcas de divisão).
*Uma fração pode ser transferida para a memória.
*Quando uma fração for extraída, a resposta é exibida como um número decimal.
*O acionamento da tecla [a⁄c] depois da tecla [=] converte a resposta da fração à escala decimal.

٧ - ٤ عمليات حساب الكسور

* يجب أن يكون إجمالي التوافيق والتبادل والكسور مكون من ١٠ أرقام (بما فيها العلامات الفاصلة).
* يمكن نقل كسر إلى الذاكرة.
* عند إستخراج كسر، يتم عرض الاجابة على شكل كسر عشرى.
* إن ضغط المفتاح [a⁄c] بعد المفتاح [=] يحول إجابة الكسور إلى النظام العشرى.

$$4\frac{5}{6}\times(3\frac{1}{4}+1\frac{2}{3})\div 7\frac{8}{9}=$$

4 [a⁄c] 5 [a⁄c] 6 [×] [(-)] 3 [a⁄c] 1 [a⁄c] 4 [+] 1 [a⁄c] 2 [a⁄c] 3 [)] [÷] 7 [a⁄c] 8 [a⁄c] 9 [=]	3⌟7⌟568.
[a⁄c]	3.012323944
[a⁄c]	3⌟7⌟568.

$$2\frac{4}{5}+\frac{3}{4}-1\frac{1}{2}=$$

2 [a⁄c] 4 [a⁄c] 5 [+] 3 [a⁄c] 4 [−]	3⌟11⌟20.
[a⁄c]	3.55
1 [a⁄c] 1 [a⁄c] 2 [=]	2⌟1⌟20.

$$(1.5\times10^{7})-\{(2.5\times10^{6})\times\frac{3}{100}\}=$$

1 [.] 5 [EXP] 7 [−] 2 [.] 5 [EXP] 6 [×] 3 [a⁄c] 100 [=]	14925000.

*During a fraction calculation, a figure is reduced to the lowest terms by pressing a function command key ([+], [−], [×] or [÷]) or the [=] key if the figure is reducible.

*Durante un cálculo de fracción, una cifra es reducida a los términos mínimos al presionar una tecla de comando de función ([+], [−], [×] ó [÷]) o la tecla [=] si la cifra es reducible.

*Pendant un calcul de fraction, un chiffre est réduit, s'il est réductible, aux termes les plus bas en appuyant sur une touche de commande de fonction ([+], [−], [×], [÷]) ou sur la touche [=].

* 在分數計算中，若分子與分母可以約分時只要按下一般計算用鍵([+]、[−]、[×] 或 [÷])或 [=] 鍵即可使其約分。

*소숫점 계산중에는, 만일 숫자가 약분이 가능한 숫자일 경우면, 기능 지시키([+], [−], [×] 혹은 [÷])나 [=] 키를 눌러줌으로써 최저치까지 약분이 됩니다.

*Selama perhitungan pecahan, bilangan disederhanakan ke bentuk terendahnya dengan menekan salah satu tombol perintah fungsi ([+], [−], [×] atau [÷]) atau tombol [=], jika bilangan itu dapat disederhanakan.

*Durante um cálculo fracionário, uma cifra é reduzida aos termos mínimos quando se pressiona uma tecla de comando de função (+, −, × ou ÷) ou a tecla = se o número for reduzível.

* أثناء عمليات حساب الكسور، يتم إختزال الرقم إلى أصغر الحدود بضغط مفتاح طلب الوظيفة (+ ، − ، × أو ÷) أو المفتاح = إذا كان الرقم قابل للاختزال.

$3\frac{456}{78} = 8\frac{11}{13}$ (Reduction) (Reducción) (Réduction) (約分) (약분) (Penyederhanaan) (Redução) (إختزال)

3 a⁄c 456 a⁄c 78	3⌟456⌟78.
=	8⌟11⌟13.

*By pressing SHIFT d/c continuously, the displayed value will be converted to the improper fraction.

*Presionando las teclas SHIFT d/c continuamente, el valor presentado será convertido a la fracción impropia.

*Si on appuie sur SHIFT d/c continuellement, la valeur affichée sera convertie en une fraction non inférieure à l'unité.

* 繼續按下 SHIFT d/c 鍵，顯示幕的數值會換算成假分數。

* SHIFT d/c 키를 연속적으로 눌러 줌으로써, 전시판의 가치값은 가분수로 전환됩니다.

*Dengan menekan SHIFT d/c berturut-turut, nilai tampilan akan dikonversikan ke bentuk pecahan semu (pembilang lebih besar).

*Ao pressionar SHIFT d/c continuamente, o valor exibido será convertido a uma fração imprópria.

* بضغط المفتاح SHIFT d/c باستمرار، سوف تتحول القيمة المعروضة إلى كسر غير صحيح.

Continuing from above
Continuación desde arriba
Suite
接下來的計算
위의 것이 집니다.
Lanjutan
Continuação do exemplo anterior
متواصلا مع المذكور أعلاه

SHIFT d/c	115⌟13.

$\frac{12}{45} - \frac{32}{56} =$

12 a⁄c 45 −	4⌟15.
32 a⁄c 56 =	−32⌟105.

*The answer in a calculation performed between a fraction and a decimal is displayed as a decimal.

*La respuesta de un cálculo realizado entre una fracción y un decimal aparece como decimal.

*La réponse à un calcul exécuté entre une fraction et un nombre décimal est affiché comme un nombre décimal.

* 當行分數與小數數值的計算時，答案以小數表示。

*소숫점과 십진법·사이에서 이루어진 계산의 경우, 계산의 결과는 십진법으로 표시되어 집니다.

*Jawaban suatu perhitungan yang dilangsungkan antara pecahan dengan desimal ditayangkan dalam bentuk desimal.

*A resposta em um cálculo realizado entre uma fração e um número decimal é exibida como um número decimal.

* يتم عرض الاجابة عن عملية الحساب التى أجريت بين كسر وكسر عشرى ككسر عشرى.

$\frac{41}{52} \times 78.9 =$

41 a⁄c 52 ×	41⌟52.
78 . 9 =	62.20961538

7-5 Percentage calculations

7-5 Cálculos con porcentajes

7-5 Calculs avec pourcentages

7-5 百分比計算

7-5 퍼센트 계산기능

7-5 Perhitungan persentasi

7-5 Cálculos percentuais

٧ - ٥ عمليات حساب النسبة المئوية

12% of 1500
12% de 1500
12% de 1500
1500的12%

1،500의 12%는 ?
12% dari 1500
12% de 1500
١٢٪ من ١٥٠٠

1500 × 12 SHIFT % | **180.**

Percentage of 660 against 880
Porcentaje de 660 contra 880
Pourcentage de 660 par rapport à 880
660是880的百分之幾 ?
660은 880의 몇% ?
660 persen dari 880
Porcentagem de 660 contra 880?
النسبة المئوية للعدد ٦٦٠ بالنسبة للعدد ٨٨٠

660 ÷ 880 SHIFT % | **75.**

15% add-on of 2500
15% de aumento de 2500
15% de prime sur 2500
2500加上其15%爲多少 ?
2،500의 15%를 덧붙이면 ?
Tambahan 15% dari 2500
15% de aumento de 2500
١٥٪ مضافة على العدد ٢٥٠٠

2500 × 15 SHIFT % + | **2875.**

25% discount of 3500
25% de descuento de 3500
25% de remise sur 3500
3500減掉其25%後爲多少 ?
3،500의 25% 할인은 ?
Potongan 25% dari 3500
25% de desconto de 3500
٢٥٪ مطروحة من العدد ٣٥٠٠

3500 × 25 SHIFT % − | **2625.**

300cc is added to a solution of 500cc. What is the percent of the new volume to the initial one?

Se agregan 300cc a una solución de 500cc. ¿Cuál es el porcentaje del nuevo volumen con respecto al primero?

300cm³ sont ajoutés à une solution de 500cm³. Quel est le pourcentage du nouveau volume par rapport au volume initial?

將300cc加入500cc的液體中時, 新的液體體積是原來的百分之多少 ?

300cc가 500cc의 용액에 더해질 경우 처음에 오는 숫자에 대한 새로운 용량의 %는 ?

300cc ditambahkan ke larutan 500cc. Berapa persentasi volume baru terhadap volume semula?

300cc é adicionado a uma solução de 500cc. Qual é a porcentagem do novo volume em função do volume anterior?

٣٠٠ سم³ أضيفت إلى محلول ٥٠٠ سم³. ما هى النسبة المئوية للحجم الجديد بالنسبة للحجم الأولى ؟

300 + 500 SHIFT % | **160.**
(%)

If you made $80 last week and $100 this week, what is the percent increase?

Si Ud. ganó $80 la semana pasada y $100 esta semana. ¿Cuál es el porcentaje de suba?

Si vous avez gagné $80 la semaine dernière et $100 cette semaine, que est le pourcentage de l'augmentation?

若您上星期賺了$80, 而本星期賺了$100, 則增加了百分之幾?

만일, 지난 주에 80S를 쓰고 이번주에 100S를 썼을 경우에, 증가된 %는?

Jika anda memperoleh $80 minggu lalu dan $100 minggu ini, berapa persen pertambahannya?

Se você trabalhou $80 na semana passada e $100 nesta semana, qual é a porcentagem de aumento?

إذا عملت ٨٠ دولارا بالأسبوع الماضى و١٠٠ دولار هذا الأسبوع، ما هى النسبة المئوية للزيادة ؟

100 − 80 SHIFT %	25. (%)

12% of 1200	12% de 1200	12% de 1200
18% of 1200	18% de 1200	18% de 1200
23% of 1200	23% de 1200	23% de 1200
1200的12%	1200의 12%는?	12% dari 1200
1200的18%	1200의 18%는?	18% dari 1200
1200的23%	1200의 23%는?	23% dari 1200
12% de 1200	١٢٪ من ١٢٠٠	
18% de 1200	١٨٪ من ١٢٠٠	
23% de 1200	٢٣٪ من ١٢٠٠	

1200 × × 12 SHIFT %	K 144.
18 SHIFT %	K 216.
23 SHIFT %	K 276.

26% of 2200	26% de 2200	26% de 2200
26% of 3300	26% de 3300	26% de 3300
26% of 3800	26% de 3800	26% de 3800
2200的26%	2200의 26%는?	26% dari 2200
3300的26%	3300의 26%는?	26% dari 3300
3800的26%	3800의 26%는?	26% dari 3800
26% de 2200	٢٦٪ من ٢٢٠٠	
26% de 3300	٢٦٪ من ٣٣٠٠	
26% de 3800	٢٦٪ من ٣٨٠٠	

26 × × 2200 SHIFT %	K 572.
3300 SHIFT %	K 858.
3800 SHIFT %	K 988.

Percentage of 30 against 192
Percentage of 156 against 192

Porcentaje de 30 contra 192
Porcentaje de 156 contra 192

Pourcentage de 30 par rapport à 192
Pourcentage de 156 par rapport à 192

30是192的百分之幾?
156是192的百分之幾?

30은 192의 몇%?
156은 192의 몇%?

30 persen dari 192
156 persen dari 192

Porcentagem de 30 contra 192
Porcentagem de 156 contra 192

النسبة المئوية للعدد ٣٠ بالنسبة للعدد ١٩٢
النسبة المئوية للعدد ١٥٦ بالنسبة للعدد ١٩٢

192 ÷ ÷ 30 SHIFT %	K 15.625
156 SHIFT %	K 81.25

*600 grams was added to 1200 grams. What percent is the total to the initial weight?
*510 grams was added to 1200 grams. What percent is the total to the initial weight?

*Se agregan 600 gramos a 1200 gramos. ¿Cuál es el porcentaje del peso total con respecto al inicial?
*Se agregan 510 gramos a 1200 gramos. ¿Cuál es el porcentaje del peso total con respecto al inicial?

*600 g sont ajoutés à 1200 g. Quel est le pourcentage du poids total par rapport au poids initial?
*510 g sont ajoutés à 1200 g. Quel est le pourcentage du poids total par rapport au poids initial?

* 將600g加入1200g時，總重量爲原重的百分之幾？
* 將510g加入1200g時，總重量爲原重的百分之幾？

*600그램에 1、200그램을 더했을 경우, 처음 중량에 대한 전체중량의 %는？
*510그램에 1、200그램을 더했을 경우, 처음 중량에 대한 전체중량의 %는？

*600 gram ditambahkan ke 1200 gram. Berapa persentasi berat total terhadap berat mula-mula?
*510 gram ditambahkan ke 1200 gram. Berapa persentasi berat total terhadap berat mula-mula?

*600 gramas foram adicionadas a 1200 gramas. Qual é a porcentagem do peso total em função do peso inicial?
*510 gramas foram adicionadas a 1200 gramas. Qual é a porcentagem do peso total em função do peso inicial?

* أضيف ٦٠٠ جرام إلى ١٢٠٠ جرام. ما هى نسبة الوزن الاجمالى بالنسبة للوزن الأصلى ؟
* أضيف ٥١٠ جرام إلى ١٢٠٠ جرام. ما هى نسبة الوزن الاجمالى بالنسبة للوزن الأصلى ؟

1200 ⊞ ⊞ 600 SHIFT %	K 150.
510 SHIFT %	K 142.5

*How many percent down is 138 grams to 150 grams?
*How many percent down is 129 grams to 150 grams?

*¿Cuál es el porcentaje de disminución de 138 gramos con respecto a 150 gramos?
*¿Cuál es el porcentaje de disminución de 129 gramos con respecto a 150 gramos?

*Quel est le pourcentage de la diminution de 150 g par rapport à 138 g?
*Quel est le pourcentage de la diminution de 150 g par rapport à 129 g?

* 138g比150g少了百分之幾？
* 129g比150g少了百分之幾？

*150그램에 대해 138그램은 몇% 떨어진 것인가？
*150그램에 대해 129그램은 몇% 떨어진 것인가？

*Berapa persen penurunan dari 150 gram menjadi 138 gram?
*Berapa persen penurunan dari 150 gram menjadi 129 gram?

*Quanto por cento menos é 138 gramas de 150 gramas?
*Quanto por cento menos é 129 gramas de 150 gramas?

* ما هى النسبة المئوية التى يقل بها الوزن ١٣٨ جرام عن ١٥٠ جرام ؟
* ما هى النسبة المئوية التى يقل بها الوزن ١٢٩ جرام عن ١٥٠ جرام ؟

150 ⊟ ⊟ 138 SHIFT %	K -8.
129 SHIFT %	K -14.

8/FUNCTION CALCULATIONS

Scientific function keys can be utilized as subroutines of four basic calculations (including parenthesis calculations).

*This calculator computes as $\pi = 3.141592654$ and $e = 2.718281828$.
*In some scientific functions, the display disappears momentarily while complicated formulas are being processed. So do not enter numerals or press the function key until the previous answer is displayed.
*For each input range of the scientific functions, see page 15.

8/CALCULOS DE FUNCIONES

Las teclas de las funciones científicas pueden ser empleadas como subrutinas en cualquiera de los cuatro cálculos básicos (incluyendo los cálculos entre paréntesis).

*Esta calculadora computa como $\pi = 3,141592654$ y $e = 2,718281828$.
*En algunas de las funciones científicas, la presentación en pantalla desaparece por algún instante mientras se están procesando fórmulas complejas, de manera que no se deben entrar numerales o presionar otras teclas de funciones hasta que aparezca la respuesta previa.
*Remitirse a la página 33 para cada gama de entrada de las funciones científicas.

8/CALCULS DE FONCTION

Les touches de fonction scientifique peuvent être utilisées comme sous-programmes des quatre calculs élémentaires (y compris les calculs avec parenthèses).

*Cet appareil calcule avec $\pi = 3,141592654$ et $e = 2,718281828$.
*Avec certaines fonctions scientifiques, l'affichage disparaît momentanément tandis que des formules compliquées sont traitées. Il ne faut donc pas entrer de nombre ou appuyer sur une touche de fonction tant que la réponse précédente n'est pas affichée.
*Pour la gamme d'entrée de chacune des fonctions scientifiques, voir page 51.

8/函數計算

科學函數鍵可以當成四則基本運算(包含括弧計算)的子程序使用。

* 本計算機的計算以 $\pi = 3.141592654$另外 $e = 2.718281828$
* 在某些科學函數，當進行複雜公式的計算時會有顯示幕瞬間停頓的情形發生。這時候請不要輸入數值或是按任何函數鍵，直到顯示幕顯出答案爲止。
* 各科學函數的輸入範圍請參閱69頁。

8/관수계산법

과학적 관수 기능키는 4가지 기본계산의 서브루틴(부분적 루틴)으로 사용됩니다.

*이 계산기에서 $\pi = 3.141592654$, $e = 2.718281828$로 계산되어집니다.
*몇몇 과학적 관수계산에서는, 복잡한 계산이 행해지고 있는 동안 전시판은 잠시 꺼짐. 그렇기 때문에, 이 동안에는 다음 계산의 해답이 나올 때까지 새로운 숫자를 입력시키거나 관수키를 눌러서는 안됩니다.
*과학적 관수계산의 각 입력범위는 P.87를 참고하십시오.

8/PERHITUNGAN FUNGSI

Tombol-tombol fungsi matematika dapat digunakan sebagai subrutin dari empat perhitungan dasar (termasuk perhitungan bertanda kurung)

*Kalkulator ini menghitung $\pi = 3,141592654$ dan $e = 2,718281828$.
*Pada beberapa fungsi matematika, tampilan menghilang sejenak ketika rumus yang rumit sedang diproses. Karena itu jangan memasukkan bilangan atau menekan tombol fungsi sampai jawaban ditampilkan.
*Jangkauan masukan tiap-tiap fungsi dapat dilihat pada halaman 105.

8/CÁLCULOS DE FUNÇÕES

As teclas de funções científicas podem ser empregadas como sub-rotinas dos quatro cálculos básicos (incluindo os cálculos com parênteses).

*Esta calculadora computa $\pi = 3,141592654$ e $e = 2,718281828$.
*Em algumas funções científicas, a exibição desaparece momentaneamente enquanto fórmulas complicadas estiverem sendo processadas. Portanto, não entre nenhum número nem pressione nenhuma tecla de função até que a resposta seja exibida.
*Para cada faixa de entrada das funções científicas, consulte a página 123.

٨ / عمليات حساب الدالات

يمكن إستخـدام مفاتيح الوظائف العلمية كطرق روتينية فرعية بالنسبة لعمليات الحساب الأساسية الأربع (بما فى ذلك عمليات حساب الأقواس).

* هذه الآلة الحاسبة تقوم بحساب (ط) π = ٣.١٤١٥٩٢٦٥٤ وأساس اللوغاريثم الطبيعي e = ٢.٧١٨٢٨١٨٢٨.
* في بعض الدالات العلميـة، يختفي العرض لحظيا أثناء التعامل مع المعادلات المعقدة. لهذا، لا تدخل أية أرقام أو تضغط أى مفتاح وظيفة حتى يتم عرض الاجابة السابقة.
* بالنسبة لكل معدل إدخال للدالات العليمة، أنظر صفحة ١٥.

8-1 Sexagesimal ⟷ Decimal conversion

The [°'''] key converts the sexagesimal figure (degree, minute and second) to decimal notation. Operation of [SHIFT][°'''] converts the decimal notation to the sexagesimal notation.

8-1 Conversión sexagesimal ⟷ decimal

La tecla [°'''] convierte una cifra sexagesimal (grados, minutos y segundos) a notación decimal. Al operar [SHIFT][°'''] se convierte la notación decimal en sexagesimal.

8-1 Conversion sexagésimal ⟷ décimal

La touche [°'''] convertit le nombre sexagésimal (degrés, minutes et secondes) en notation décimale. L'appui sur [SHIFT][°'''] convertit la notation décimale en notation sexagésimale.

8-1 60進位↔10進位換算

[°''']鍵可將60進位的數值(度、分和秒)換算成10進位表示的數值。操作 [SHIFT][°'''] 鍵時可以將10進位數值換算成60進位表示的數值。

8-1 60진법⟷10진법 변환

[°'''] 키는 60진수(도(°), 분(′), 초(″))를 10진수(°)로 변환함. [SHIFT][°'''] 키의 작용은 반대로 10진수를 60진수로 변환시킵니다.

8-1 Konversi Seksagesimal ⟷ Desimal

Tombol [°'''] mengkonversikan bilangan seksagesimal (derajat, menit dan detik) ke notasi desimal. Operasi [SHIFT][°'''] mengkonversikan notasi desimal ke notasi seksagesimal.

8-1 Conversão Sexagesimal ⟷ Decimal

A tecla [°'''] converte uma cifra sexagesimal (graus, minutos e segundos) em uma notação decimal. A operação de [SHIFT][°'''] por sua vez, converte uma notação decimal em uma notação sexagesimal.

٨ – ١ التحويل بين الأعداد السداسية عشر ⟷ والعشرية

يقوم المفتاح [°'''] بتحويل الرقم السداسى عشر (الدرجة، الدقيقة والثانية) إلى الرمز العشرى. تشغيل المفتاح [SHIFT][°'''] يحول الرمز العشرى إلى الرمز السداسى عشر.

14°25′36″ =	14[°''']	14.
	25[°''']	14.41666667
	36[°''']	14.42666667
	[SHIFT][°''']	14°25°36.

8-2 Trigonometric / Inverse trigonometric functions

8-2 Funciones trigonométricas y trigonométricas inversas

8-2 Fonctions trigonométriques / trigonométriques inverses

8-2 三角函數/反三角函數

8-2 삼각함수/역삼각함수

8-2 Fungsi trigonometri / invers trigonometri

8-2 Funções trigonométricas/ trigonométricas inversas

٨ - ٢ الدالات المثلثية/المثلثية العكسية

$\sin(\frac{\pi}{6}\text{rad}) =$

"RAD" (MODE 5)
π ÷ 6 = sin | 0.5

$\cos 63°52'41'' =$

"DEG" (MODE 4)
63 °'" 52 °'" 41 °'" | 63.87805556
cos | 0.440283084

$\tan(-35\text{gra}) =$

"GRA" (MODE 6) 35 +/- tan | -0.612800788

$2 \cdot \sin 45° \times \cos 65° =$

"DEG"
2 × 45 sin × 65 cos = | 0.597672477

$\cot 30° = \frac{1}{\tan 30°} =$

"DEG" 30 tan SHIFT 1/x | 1.732050808

$\sec(\frac{\pi}{3}\text{rad}) = \frac{1}{\cos(\frac{\pi}{3}\text{rad})} =$

"RAD" π ÷ 3 = cos SHIFT 1/x | 2.

$\text{cosec}\, 30° = \frac{1}{\sin 30°} =$

"DEG" 30 sin SHIFT 1/x | 2.

$\cos^{-1}\frac{\sqrt{2}}{2} =$

"RAD" 2 √ ÷ 2 = SHIFT cos | 0.785398163

$\tan^{-1} 0.6104 =$

"DEG" . 6104 SHIFT tan | 31.39989118
SHIFT °'" | 31°23°59.61

8-3 Hyperbolic functions and inverse hyperbolic functions

8-3 Funciones hiperbólicas y funciones hiperbólicas inversas

8-3 Fonctions hyperboliques et fonctions hyperboliques inverses

8-3 雙曲線函數和反雙曲線函數

8-3 쌍곡선 함수/역쌍곡선 함수

8-3 Fungsi hiperbolik dan inversnya

8-3 Funções hiperbólicas/ hiperbólicas inversas

٨ - ٣ الدالات الزائدية والدالات الزائدية العكسية

$\sinh 3.6 =$ 3 . 6 hyp sin | 18.28545536

$\tanh 2.5 =$ 2 . 5 hyp tan | 0.986614298

$\cosh 1.5 - \sinh 1.5 =$

1 [.] 5 [Min] [hyp] [cos] [−]	M 2.352409615
[MR] [hyp] [sin] [=]	M 0.22313016
[ln]	M −1.5

$\sinh^{-1} 30 =$ 30 [SHIFT] [hyp] [sin⁻¹] | 4.094622224 |

Solve tanh $4x = 0.88$.
Solucionar tanh $4x = 0{,}88$.
Résoudre tanh $4x = 0{,}88$.
試解出 tanh $4x = 0.88$。
tanh $4x = 0.88$을 풀어 준다.
Hitung tanh $4x = 0{,}88$.
Solucione tanh $4x = 0{,}88$.
tanh $4x = 0{,}88$. حل

$$x = \frac{\tanh^{-1} 0.88}{4} =$$

[.] 88 [SHIFT] [hyp] [tan⁻¹] [÷] 4 [=] | 0.343941914 |

8-4 Common & Natural logarithms/ Exponentiations (Common antilogarithms, Natural antilogarithms, Powers and Roots)

8-4 Logaritmos comunes y naturales/ exponenciaciones (Antilogaritmos comunes, Antilogaritmos naturales, Potencias y Raíces)

8-4 Logarithmes décimaux et népériens/ élévations à une puissance (cologarithmes décimaux, cologarithmes népériens, puissances et racines)

8-4 常用和自然對數/指數(常用逆對數、自然逆對數、乘方和根)

8-4 상용&정상대수/지수(상용 역대수, 정상 역대수, 2승 계산, 누승근 계산)

8-4 Logaritma/eksponen biasa dan natural (antilogaritma biasa, antilogaritma natural, pangkat dan akar)

8-4 Logaritmos decimais e naturais/ Expoentes (Antilogaritmos decimais, antilogaritmos naturais, potências e raízes)

٨ – ٤ اللوغاريثمات العادية والطبيعية/الأسس (مقابل اللوغاريثمات العادية، مقابل اللوغاريثمات الطبيعية، القوى والجذور)

$\log 1.23 (= \log_{10} 1.23) =$

1 [.] 23 [log] | 0.089905111 |

Solve $4^x = 64$.
Solucionar $4^x = 64$.
Résoudre $4^x = 64$.
試解出 $4^x = 64$.
$4^x = 64$을 풀어 준다.
Hitung $4^x = 64$.
Solucione $4^x = 64$.
$4^x = 64$. حل

$$x \cdot \log 4 = \log 64$$

$$x = \frac{\log 64}{\log 4}$$

64 [log] [÷] 4 [log] [=] | 3. |

$\ln 90\,(=\log_e 90)=$

90 [ln] | 4.49980967 |

$\log 456 \div \ln 456 =$

456 [Min] [log] [÷] [MR] [ln] [=] | M 0.434294481 |

$10^{1.23}=$

1 [.] 23 [SHIFT] [10^x] | 16.98243652 |

(To obtain the anti-logarithm of common logarithm 1.23)
(Para obtener el antilogaritmo del logaritmo común 1,23)
(Pour obtenir l'antilogarithme du logarithme ordinaire 1,23)
(試求出常用對數1.23的逆對數)
(상용 대수 1.23의 역대수를 구하려면)
(Untuk mendapatkan anti-logaritma dari logaritma biasa 1,23)
(Para obter o antilogaritmo do logaritmo decimal 1,23)
(للحصول على اللوغارثم المضاد للوغارثم المعتاد 1.23)

$e^{4.5}=$ 4 [.] 5 [SHIFT] [e^x] | 90.0171313 |

(To obtain the anti-logarithm of natural logarithm 4.5)
(Para obtener el antilogaritmo del logaritmo natural 4,5)
(Pour obtenir l'antilogarithme du logarithme naturel 4,5)
(試求出自然對數4.5的逆對數)
(자연 대수 4.5의 역대수를 구하려면)
(Untuk mendapatkan anti-logaritma dari logaritma natural 4,5)
(Para obter o antilogaritmo do logaritmo natural 4,5)
(للحصول على اللوغارثم المضاد للوغارثم الطبيعى 4.5)

$10^{0.4}+5\cdot e^{-3}=$

[.] 4 [SHIFT] [10^x] [+] 5 [×] 3 [+/-] [SHIFT] [e^x] [=] | 2.760821773 |

$5.6^{2.3}=$

5 [.] 6 [SHIFT] [x^y] 2 [.] 3 [=] | 52.58143837 |

$123^{1/7}\,(=\sqrt[7]{123})=$

123 [SHIFT] [$\sqrt[x]{y}$] 7 [=] | 1.988647795 |

$4^{2.5}=$
$0.16^{2.5}=$
$9^{2.5}=$

2 [.] 5 [SHIFT] [x^y] [SHIFT] [x^y] 4 [=] | 32. |
[.] 16 [=] | 0.01024 |
9 [=] | 243. |

$(78-23)^{-12}=$

[(···] 78 [−] 23 [···)] [SHIFT] [x^y] 12 [+/-] [=] | 1.305111829^{-21} |

$3^{12}+e^{10}=$

3 [SHIFT] [x^y] 12 [+] 10 [SHIFT] [e^x] [=] | 553467.4658 |

$\log \sin 40^\circ + \log \cos 35^\circ =$

"DEG"

40 [sin] [log] [+] 35 [cos] [log] [=] | −0.278567983 |
[SHIFT] [10^x] | 0.526540784 |

(The antilogarithm ..... 0.526540784)
(El antilogaritmo ..... 0,526540784)
(Le cologarithme ..... 0,526540784)
(逆對數爲..... 0.526540784)
(역대수..... 0.526540784)
(Antilogaritmanya ..... 0,526540784)
(Antilogaritmo ..... 0,526540784)
(مقابل اللوغاريثم ..... ٠,٥٢٦٥٤٠٧٨٤)

$15^{1/5} + 25^{1/6} + 35^{1/7} =$

15 [SHIFT] [$\sqrt[3]{x}$] 5 [+] 25 [SHIFT] [$\sqrt[3]{x}$] 6 [+] 35 [SHIFT] [$\sqrt[3]{x}$] 7 [=] **5.090557037**

8-5 Square roots, Cube roots, Squares, Reciprocals & Factorials

8-5 Raíces cuadradas, Raíces cúbicas, Cuadrados, Recíprocos y Factoriales

8-5 Racines carrées, racines cubiques, carrés, inverses et factorielles

8-5 平方根、立方根、平方、倒數和階乘

8-5 평방근, 세제곱근, 입방근, 역수, 계승

8-5 Akar kuadrat, akar pangkat tiga, kuadrat, kebalikan dan faktorial

8-5 Raízes quadradas, raízes cúbicas, quadrados, recíprocas e fatoriais

٨ - ٥ الجذور التربيعية، الجذور التكعيبية، تربيع الأعداد، المعكوسات والمضروب

$\sqrt{2} + \sqrt{3} \times \sqrt{5} =$

2 [$\sqrt{\ }$] [+] 3 [$\sqrt{\ }$] [×] 5 [$\sqrt{\ }$] [=] **5.287196909**

$\sqrt[3]{5} + \sqrt[3]{-27} =$

5 [SHIFT] [$\sqrt[3]{\ }$] [+] 27 [+/-] [SHIFT] [$\sqrt[3]{\ }$] [=] **-1.290024053**

$123 + 30^2 =$

123 [+] 30 [SHIFT] [x^2] [=] **1023.**

$$\frac{1}{\frac{1}{3} - \frac{1}{4}} =$$

3 [SHIFT] [1/x] [−] 4 [SHIFT] [1/x] [=] [SHIFT] [1/x] **12.**

$8!(= 1 \times 2 \times 3 \times \ldots\ldots \times 7 \times 8) =$

8 [SHIFT] [x!] **40320.**

8-6 Miscellaneous functions (FIX, SCI, NORM, RND, RAN#, ENG)

8-6 Funciones varias (FIX, SCI, NORM, RND, RAN#, ENG)

8-6 Fonctions diverses (FIX, SCI, NORM, RND, RAN#, ENG)

8-6 其他函數功能(FIX、SCI、NORM、RND、RAN#、ENG)

8-6 혼합관수(FIX, SCI, NORM, RND, RAN#, ENG)

8-6 Aneka ragam fungsi (FIX, SCI, NORM, RND, RAN#, ENG)

8-6 Funções diversas (FIX, SCI, NORM, RND, RAN#, ENG)

٨ - ٦ وظائف متنوعة (FIX ، SCI ، NORM ، RND ، RAN# ، ENG)

1.234 + 1.234 =

"FIX2" (MODE 7 2)

1 . 234 +	FIX 1.23
1 . 234 =	FIX 2.47
MODE 9	2.468

"FIX2"

1 . 234 SHIFT RND +	FIX 1.23
1 . 234 SHIFT RND =	FIX 2.46
MODE 9	2.46

1 ÷ 3 + 1 ÷ 3 =

"SCI2" (MODE 8 2)

1 ÷ 3 +	SCI 3.3^{-01}
1 ÷ 3 =	SCI 6.7^{-01}
MODE 9	0.666666666

"SCI2"

◀ 1 ÷ 3 ▶ SHIFT RND +	SCI 3.3^{-01}
◀ 1 ÷ 3 ▶ SHIFT RND =	SCI 6.6^{-01}
MODE 9	0.66

1 ÷ 1000 = 0.001
= 1 × 10 ^{3}

1 ÷ 1000 =	$1.^{-03}$
MODE 9	0.001

(Norm 1)
(Norme 1)
(規格 1)
(표준 1)
(Norma 1)

(Norm 2)
(Norme 2)
(規格 2)
(표준 2)
(Norma 2)

123m × 456
= 56088m
= 56.088km

123 × 456 =	56088.
ENG	56.088 03

78g × 0.96
= 74.88g
= 0.07488kg

78 × 0.96 =	74.88
SHIFT ENG	0.07488 03

Generate a random number between 0.000 and 0.999.

Generar un número al azar entre 0,000 y 0,999.

Générer un nombre aléatoire entre 0,000 et 0,999.

產生0.000至0.999之間的一個隨機數。

0.000과 0.999사이의 난수를 산출하라.

Hasilkan sebuah bilangan acak (random) antara 0,000 dan 0,999.

Gere um número aleatório entre 0,000 e 0,999.

كون رقما عشوائيا بين ٠,٠٠٠ و ٠,٩٩٩.

SHIFT RAN#	0.570

(Example) (Ejemplo)
(Exemple) (例題)
(例) (Contoh)
(Exemplo) (مثال)

8-7 Coordinate transformation

8-7 Transformación de coordenadas

8-7 Transformation de coordonnées

8-7 座標變換

8-7 좌표 이동(극좌표, 직각좌표)

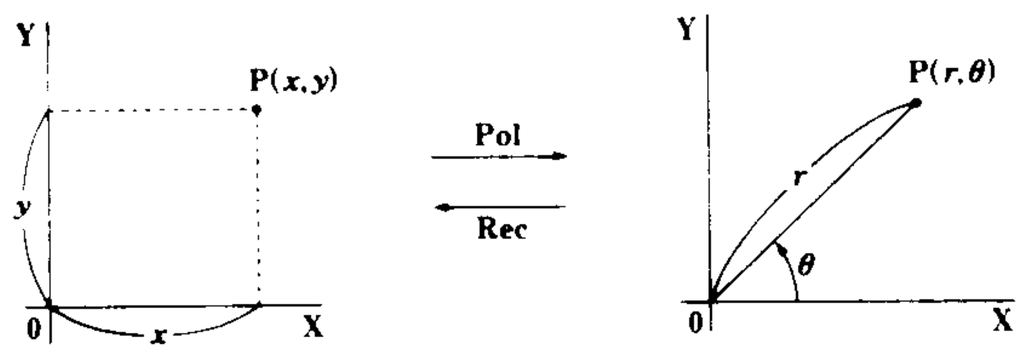
8-7 Transformasi koordinat

8-7 Transformação de coordenadas

٨ - ٧ نقل المحاور

- **Rectangular coordinates**
- **Coordenadas rectangulares**
- **Coordonnées rectangulaires**
- 直角座標
- 직각좌표
- **Koordinat empat persegi panjang**
- **Coordenadas retangulares**
- **المحاور المتعامدة**

- **Polar coordinates**
- **Coordenadas polares**
- **Coordonnées polaires**
- 極座標
- 극좌표
- **Koordinat kutub**
- **Coordenadas polares**
- **المحاور القطبية**



- With polar coordinates, θ can be calculated within a range of $-180° < \theta \leqq 180°$. (Calculation range is the same with radians or grads.)
- Con las coordenadas polares, θ puede calcularse dentro de una gama de $-180° < \theta \leqq 180°$. (La gama de cálculo es la misma tanto con radianes como con grados.)
- Avec des coordonnées polaires, θ peut être calculé dans une gamme de $-180° < \theta \leqq 180°$. (La gamme de calcul est la même avec des radians ou des grades.)
- 極座標時，θ 的計算值可在 $-180° < \theta \leqq 180°$ 的範圍內求出。(弧度和百分度的計算範圍亦同。)
- 극좌표에서 $-180° < \theta \leqq 180°$의 범위내에서 θ이 계산될 수 있다. (계산 범위는 radians 또는 grads와 동일하다)

- Dengan koordinat kutub, θ dapat dikalkulasi didalam suatu batas kisar $-180° < \theta \leqq 180°$. (Batas kisar perhitungan sama dengan yang berlaku untuk radian atau grad.)
- Com as coordenadas polares, pode-se calcular θ dentro de uma faixa de $-180° < \theta \leqq 180°$. (A faixa de cálculo é a mesma com radianos e grados.)
- في المحاور القطبية يمكن ان تحسب قيمة الزاوية θ فى المدى $-180° < \theta \leqq 180°$ (نفس مدى الحسابات بالنسبة للتقدير الدائرى او التقدير الستينى).

If $x = 14$ and $y = 20.7$, what are r and $\theta°$?

Si $x = 14$ e $y = 20,7$ ¿cómo son r y $\theta°$?

Si $x = 14$ et $y = 20,7$, quelles sont les valeurs de r et $\theta°$?

當 $x = 14$, $y = 20.7$時，試求出 r 和 $\theta°$。

$x = 14$, $y = 20.7$ 일때 r 및 $\theta°$의 값은?

Jika $x = 14$ dan $y = 20,7$, berapa r dan $\theta°$?

Se $x = 14$ e $y = 20,7$, quais serão os valores de r e $\theta°$?

ما هى قيمة r و $\theta°$ عندما تكون $x = 14$ و $y = 20.7$ ؟

"DEG"

14 [SHIFT] [R→P] **20** [·] **7** [=] **24.98979792** (r)

(Continuing) (Continuando) (En continuant) (繼續) (계속) (Selanjutnya) (Continuação) (تابع) [SHIFT] [X↔Y] [SHIFT] [°'"] **55°55°42.2** (θ)

If $r = 25$ and $\theta = 56°$, what are x and y?

Si $r = 25$ y $\theta = 56°$, ¿cómo son x e y?

Si $r = 25$ et $\theta = 56°$, quelles sont les valeurs de x et y?

當 $r = 25$, $\theta = 56°$時，試求出 x 和 y。

$r=25$이고, $\theta=56°$ 일때 x 및 y의 값은?

Jika $r=25$ dan $\theta=56°$, berapa x dan y?

Se $r=25$ e $\theta=56°$, quais serão os valores de x e y?

ما هى قيمة x و y عندما تكون $r=25$ و $\theta=56°$ ؟

"DEG"

25 [SHIFT] [P→R] 56 [=] **13.97982259** (x)

(Continuing) [SHIFT] [X↔Y] **20.72593931** (y)
(Continuando)
(En continuant)
(繼續)
(계속)
(Selanjutnya)
(Continuação)
(تابع)

8-8 Permutations
8-8 Permutaciones
8-8 Permutations
8-8 排列
8-8 순열
8-8 Permutasi
8-8 Permutações
٨ - ٨ التباديل

Input range: $n \geqq r$ (n, r: natural numbers)
Gama de entrada: $n \geqq r$ (n, r: números naturales)
Gamme d'entrée: $n \geqq r$ (n, r: entiers naturels)

輸入範圍: $n \geqq r$ (n、r: 自然數)
입력 범위 : $n \geqq r$ (n, r : 자연수)

Jangkauan masukan: $n \geqq r$ (n, r: bilangan asli)
Faixa de entrada: $n \geqq r$ (n, r: números naturais)
مدى الادخال : $r \leqq n$ (n ، r : اعداد طبيعية)

Formula: / Fórmula: / Formule: / 公式 : / 공식 : /
Rumus: / Fórmula / المعادلة

$$nPr = \frac{n!}{(n-r)!}$$

Ex.)
How many numbers of 4 figures can be obtained when permuting 4 different numbers among 7 (1 to 7)?

Ej.)
¿Cuántos números de cuatro dígitos pueden ser obtenidos cuando se permutan cuatro números diferentes de entre siete (1 a 7)?

Ex.)
Combien de nombres de 4 chiffres peuvent être obtenus en permutant 4 nombres différents parmi 7 (1 à 7)?

例)
1 至 7 的排列時有多少個 4 個不同數字的 4 位數?

예)
1 에서 7 사이의 4 개의 다른 숫자를 순열할 경우, 4 개의 숫자는 몇 개 얻어질 수 있읍니까?

Contoh)
Berapa banyak macam barisan 4 angka yang dapat diperoleh dengan mempermutasikan 4 bilangan berbeda dari 7 bilangan (1 sampai 7)?

Ex.)
Quantos números de 4 cifras podem ser obtidos ao permutar 4 números diferentes entre 7 (1 a 7)?

مثال)
كم عدد يتكون من ٤ ارقام يمكن الحصول عليه عند تبديل ٤ اعداد مختلفة فيما بين ٧ (١ إلى ٧) ؟

7 [SHIFT] [nPr] 4 [=] **840.**

8-9 Combinations
8-9 Combinaciones
8-9 Combinaisons
8-9 組合
8-9 조합
8-9 Kombinasi
8-9 Combinações
٨ - ٩ التوافقيات

Input range: $n \geqq r$ (n, r: natural numbers)
Gama de entrada: $n \geqq r$ (n, r: números naturales)
Gamme d'entrée: $n \geqq r$ (n, r: entiers naturels)
輸入範圍: $n \geqq r$ (n、r: 自然數)
입력 범위 : $n \geqq r$ (n, r : 자연수)
Jangkauan masukan: $n \geqq r$ (n, r: bilangan asli)
Faixa de entrada: $n \geqq r$ (n, r: números naturais)
مدى الادخال $r \leqq n$ (n . r أعداد طبيعية)

Formula: / Fórmula: / Formule: / 公式 : / 공식 : /
Rumus: / Fórmula / المعادلة

$$nCr = \frac{n!}{r!\,(n-r)!}$$

Ex.)
How many groups of 4 members can be obtained when there are ten in class?

Ej.)
¿Cuántos grupos de cuatro miembros pueden ser obtenidos cuando hay diez de una clase?

Ex.)
Combien de groupes de 4 membres peuvent être obtenus quand ils sont dix en classe?

例)
有10個數字時，可以作成多少種 4 位數的組合？

예)
한 집단수가 열개 있다면, 4 개의 숫자는 몇 집단이 있읍니까？

Contoh)
Berapa banyak kelompok beranggota 4 yang dapat disusun dari 10 siswa dalam kelas?

Ex.)
Quantos grupos de 4 membros podem ser obtidos quando há dez em uma classe?

مثال)
كم مجموعة تتكون من ٤ أعضاء يمكن الحصول عليها عندما يكون هناك ١٠ أفراد في الفصل.

10 [SHIFT] [nCr] 4 [=] | 210.

9/STANDARD DEVIATIONS

*It is necessary to set the function mode to "SD" by pressing [MODE] [•] in sequence.
*Be sure to press [SHIFT] [SAC] in sequence prior to starting a calculation.

9/DESVIACIONES ESTANDAR

*Es necesario ajustar el modo de función en "SD" presionando [MODE] [•] en esa secuencia.
*Asegurarse de presionar [SHIFT] [SAC] en esa secuencia antes de comenzar los cálculos.

9/ECART-TYPE

*Il est nécessaire de sélectionner le mode "SD" en appuyant dans l'ordre sur [MODE] [•].
*Avant de commencer un calcul, ne pas oublier d'appuyer dans l'ordre sur [SHIFT] [SAC].

9/標準偏差值

*在依序按[MODE] [•]鍵之前必須先設定至"SD"狀態。
*在開始計算之前請確認是否已先依序按[SHIFT] [SAC]鍵。

9/표준편차

*차례로 [MODE] [•] 를 눌러 기능모우드를 "SD"에 셋트하는 것이 필요합니다.
*계산을 시작하기 전에 차례로 [SHIFT] [SAC] 를 꼭 누르십시오.

9/STANDAR DEVIASI

*Perlu dilakukan pengaturan mod fungsi ke "SD" dengan menekan [MODE] [•] berurutan.
*Pastikan untuk menekan [SHIFT] [SAC] secara berurutan sebelum memulai perhitungan.

9/DESVIOS PADRÕES

*É preciso colocar o modo de função em "SD" pressionando [MODE] [•] em seqüência.
*Certifique-se de pressionar [SHIFT] [SAC] em seqüência antes de iniciar um cálculo.

٩/الانحرافات العيارية

* من الضرورى ضبط وضع التشغيل على الوضع " SD " بضغط المفتاحين [MODE] [•] بالتتابع.
* أحرص على ضغط المفتاحين [SHIFT] [SAC] بالتتابع قبل البدء فى الحساب.

Standard deviation and mean calculations are performed as shown below:

La desviación estándar y cálculos de media se realizan tal como se muestra debajo:

Les calculs d'écart type et de moyenne sont effectués comme indiqué ci-dessous:

標準偏差值和平均值的計算如下所示:

표준 편차 및 평균 계산은 다음과 같은 방법으로 수행됩니다 :

Perhitungan simpangan baku dan nilai tengah dilakukan seperti yang terlihat dibawah:

Os cálculos de desvio padrão e de média são realizados da seguinte maneira:

طريقة حساب الانحراف القياسى والمتوسط موضحة فيما يلى:

- **Standard deviation**
- **Desviación estándar**
- **Ecart-type**
- **標準偏差值**
- 표준편차
- **Simpangan baku**
- **Desvio padrão**
- **الانحراف القياسى**

$$\sigma_n = \sqrt{\frac{\sum_{i=1}^{n}(x_i - \bar{x})^2}{n}} = \sqrt{\frac{\Sigma x^2 - (\Sigma x)^2/n}{n}}$$

[Using the entire data of a finite population to estimate the standard deviation for the population.]

[Uso de los dátos ingresados de una población infinita para estimar la desviación estándar para la población.]

[En utilisant toutes les données d'une population limitée pour estimer l'écart type de cette population.]

[使用有限人口的全部數據來求出該人口的標準偏差值。]

[유한 인구의 전체 데이타를 사용하여 인구에 대한 표준 편차를 추정합니다.]

[Dengan menggunakan seluruh data dari suatu populasi tertentu untuk menduga simpangan baku untuk populasi tersebut.]

[Usando todos os dados de uma população finita para estimar o desvio padrão da população.]

[استخدم ادخال البيانات للكثافة السكانية لحساب الانحراف القياسي للكثافة السكانية.]

$$\sigma_{n-1} = \sqrt{\frac{\sum_{i=1}^{n}(x_i - \bar{x})^2}{n-1}} = \sqrt{\frac{\Sigma x^2 - (\Sigma x)^2/n}{n-1}}$$

[Using sample data for a population to estimate the standard deviation for the population.]

[Uso de los datos de muestra de una población para estimar la desviación estándar para la población.]

[En utilisant des données échantillon pour une population afin d'estimer l'écart type de cette population.]

[使用人口的樣品數據來估算該人口的標準偏差值。]

[인구의 표본 데이타를 사용하여 인구에 대한 표준 편차를 추정합니다.]

[Dengan menggunakan data contoh dari suatu populasi untuk menduga simpangan baku untuk populasi.]

[Usando dados de amostras para uma população para estimar o desvio padrão da população.]

[استخدم نموذج من بيانات الكثافة السكانية لحساب الانحراف القياسي للكثافة السكانية.]

- **Mean**
- **Media**
- **Moyenne**
- **平均值**
- **평균**
- **Nilai tengah**
- **Média**
- **المتوسط**

$$\bar{x} = \frac{\sum_{i=1}^{n} x_i}{n} = \frac{\Sigma x}{n}$$

Ex.)
Find σ_{n-1}, σ_n, $\bar{x}$, n, Σx and Σx^2 based on the data: 55, 54, 51, 55, 53, 53, 54, 52.

Ej.)
Encontrar σ_{n-1}, σ_n, $\bar{x}$, n, Σx y Σx^2 basándose en los datos: 55, 54, 51, 55, 53, 53, 54, 52.

Ex.)
Trouver σ_{n-1}, σ_n, $\bar{x}$, n, Σx et Σx^2 en se basant sur les données 55, 54, 51, 55, 53, 53, 54, 52.

例題)
試求出55、54、51、55、53、53、54、52諸數據的$\sigma n-1$、σn、$\bar{x}$、n、Σx 和Σx^2值。

例)
55, 54, 51, 55, 53, 53, 54, 52의 데이타를 기준으로 $\sigma n-1$, σn, $\bar{x}$, n, Σx, Σx^2 를 구하십시오.

Contoh)
Carilah $\sigma n-1$, σn, $\bar{x}$, n, Σx dan Σx^2 berdasarkan data: 55, 54, 51, 55, 53, 53, 54, 52.

Ex.)
Encontre $\sigma n-1$, σn, $\bar{x}$, n, Σx y Σx^2 com base nos dados: 55, 54, 51, 55, 53, 53, 54, 52.

مثال) أوجد القيم $\sigma n-1$، σn، $\bar{x}$، n، Σx، و Σx^2 بالاعتماد على البيانات: ٥٥، ٥٤، ٥١، ٥٥، ٥٣، ٥٣، ٥٤، ٥٢.

" SD " (MODE ·) " SD وضع الانحراف العيارى "

SHIFT SAC 55 DATA 54 DATA 51 DATA
55 DATA 53 DATA DATA 54 DATA
52 DATA **52.**

(Sample standard deviation)
(Desviación estándar de muestra)
(Ecart-type sur un échantillon)
(取樣標準偏差值)
(표본 표준 편차)
(Standar deviasi sampel)
(Desvio padrão de amostras)
(الانحراف العيارى للنموذج)

SHIFT $\sigma n-1$ **1.407885953**

(Population standard deviation)
(Desviación estándar de población)
(Ecart-type sur une population)
(群數標準偏差值)
(모집단 표준편차)
(Standar deviasi populasi)
(Desvio padrão populacional)
(الانحراف العيارى لتعداد السكان)

SHIFT σn **1.316956719**

(Arithmetical mean)
(Media aritmética)
(Moyenne arithmétique)
(等差中項)
(산술평균)
(Rata-rata aritmatika)
(Média aritmética)
(المتوسط الحسابى)

SHIFT $\bar{x}$ **53.375**

(Number of data)
(Número de datos)
(Nombre de données)
(數據數量)
(데이타의 숫자)
(Jumlah data)
(Número de dados)
(عدد البيانات)

SHIFT n **8.**

(Sum of value)
(Suma de valores)
(Somme de valeur)
(數值總和)
(수치의 총계)
(Jumlah nilai)
(Soma dos valores)
(مجموع القيم)

SHIFT Σx **427.**

(Sum of square value)
(Suma de valores al cuadrado)
(Somme de valeurs carrées)
(數值平方和)
(제곱차의 총계)
(Jumlah kuadrat nilai)
(Soma do valor ao quadrado)
(مجموع القيم المربعة)

SHIFT Σx^2 **22805.**

What is deviation of the unbiased variance, the difference between each datum, and the mean of the above data?

¿Cuál es la desviación de una varianza sin sesgo, la diferencia entre cada dato, y la media de los datos anteriores?

Quel est l'écart de la variance neutre, la différence entre chaque donnée et la moyenne des données ci-dessus?

試求出上列數據的無偏差分散，各項數據間的差以及平均值。

불편분산의 편차는 얼마이며, 각 데이타와 데이타 평균과의 차이는 얼마인가?

Berapa simpangan dari keragaman tak bias, perbedaan antara setiap individu data, dan nilai tengah dari data diatas.

Qual é o desvio de uma variância não-tendenciosa, a diferença de cada dado, e a média dos dados acima?

ما هو الانحراف للتفاوت الغير متحيز، الفرق بين كل منسوب والمتوسط للبيانات السابقة ؟

(Continuing) SHIFT σ_{n-1} SHIFT x^2 **1.982142857**
(Continuando)
(En continuant)
(繼續)
(계속)
(Selanjutnya)
(Continuação)
(تابع)

SHIFT $\bar{x}$ − − 55 = **1.625**
(55 − x)

54 = **0.625**
(54 − x)

51 = **−2.375**
(51 − x)

What is $\bar{x}$ and σ_{n-1} for the following table?

¿Cuál es el valor de $\bar{x}$ y σ_{n-1} para la siguiente tabla?

Quelles sont les valeurs de $\bar{x}$ et σ_{n-1} pour le tableau suivant?

計算下表中的 $\bar{x}$ 和 σ_{n-1}

다음 표에 대한 $\bar{x}$ 및 σ_{n-1} 의 값은 얼마인가?

Berapa $\bar{x}$ dan σ_{n-1} untuk tabel berikut?

Qual o valor de $\bar{x}$ e σ_{n-1} para o seguinte quadro?

ما هى قيمة كل من $\bar{x}$ و σ_{n-1} للجدول التالى ؟

Class no. Núm. de clase Classe No. 等 級 분류번호 No. kelas N.° de classe رقم الفصل	Value Valor Valeur 數 值 값 Nilai Valor القيمة	Frequency Frecuencia Fréquence 頻 率 빈도수 Frekuensi Freqüência الذبذبة
1	110	10
2	130	31
3	150	24
4	170	2
5	190	3

SHIFT SAC 110 × 10 DATA	110.
130 × 31 DATA	130.
150 × 24 DATA	150.
170 DATA DATA	170.
190 DATA DATA DATA	190.
SHIFT n	70.
SHIFT x̄	137.7142857
SHIFT σn-1	18.42898069

*Pressing σn-1, σn, x̄, n, Σx or Σx² key need not be done sequentially.
*With data of the same value, the DATA key enters the number of data and the × key enters the value.
*To delete wrong entries press the DEL key after the SHIFT key.

*La presión de las teclas σn-1, σn, x̄, n, Σx ó Σx² no necesita ser hecha en secuencia.
*Con datos del mismo valor, la tecla DATA introduce el número de datos y la tecla × introduce el valor.
*Para borrar una entrada equivocada, presionar la tecla DEL después de la tecla SHIFT.

*L'appui sur la touche σn-1, σn, x̄, n, Σx ou Σx² n'est soumis à aucun ordre.
*Avec des données de la même valeur, la touche DATA entre le nombre de données et la touche × entre la valeur.
*Pour supprimer des entrées erronées, appuyer sur la touche DEL après avoir appuyé sur la touche SHIFT.

* σn-1、σn、x̄、n、Σx和Σx² 各鍵在使用時不一定要依次序按壓。
* 當有多數相同值的數據時，按 DATA 鍵輸入該數值的個數，然後按 × 鍵輸入該數值。
* 在按 SHIFT 鍵之後按 DEL 鍵便可以刪除錯誤的輸入數據。

* σn-1, σn, x̄, n, Σx 또는 Σx² 키는 차례로 누를 필요가 없습니다.
*같은 값(値)의 데이타로 DATA 키는 데이타의 수를 그리고 × 키는 값을 입력합니다.
*잘못된 입력을 취소하자면 SHIFT 키에 뒤이어 DEL 키를 누르십시오.

*Penekanan tombol σn-1, σn, x̄, n, Σx atau Σx² tidak perlu dilakukan berurutan.
*Dalam hal data yang sama, tombol DATA memasukkan banyaknya data dan tombol × memasukkan nilainya.
*Untuk menghapus masukan yang salah, tekan tombol DEL setelah tombol SHIFT.

*O acionamento da tecla σn-1, σn, x̄, n, Σx ou Σx² não precisa ser feito em seqüência.
*Com dados de mesmo valor, a tecla DATA entra o número de dados e a tecla × entra o valor.
*Para apagar entradas erradas, pressione a tecla DEL depois da tecla SHIFT.

* ضغط المفتاح σn-1 ، σn ، x̄ ، n ، Σx ، أو Σx² لا يحتاج عمله بالتتابع.
* مع بيانات للقيمة نفسها، يدخل المفتاح DATA عدد البيانات ويدخل المفتاح × القيمة.
* لحذف البيانات الخطأ الداخلة، إضغط المفتاح DEL بعد المفتاح SHIFT

- **Correction procedure I**
  Correct input: 51 [DATA]
- **Procedimiento de corrección I**
  Ingreso correcto: 51 [DATA]
- **Procédure de correction I**
  Entrée correcte: 51 [DATA]
- **修改程序 I**
  正確的輸入: 51 [DATA]
- **정정수속 I**
  정정입력 : 51 [DATA]
- **Prosedur koreksi I**
  Input yang benar: 51 [DATA]
- **Procedimento de correção I**
  Entrada correta: 51 [DATA]
- **عملية التصحيح I**
  الدخل الصحيح : 51 [DATA]

Error/Error Erreur/錯誤/에러 Kesalahan/Erro/ خطأ	Correction/Corrección Correction/修正/정정 Koreksi/Correção/ صحيح
50 [DATA]	[SHIFT] [DEL] 51 [DATA]
51 [×]	[1] [DATA] (or/o/ou/或/혹은/atau/ou/ أو / [AC] 51 [DATA])

Use the following procedure when the error is discovered after inputting other data.

Utilice el siguiente procedimiento cuando se descubre el error luego de ingresar otros datos.

Utiliser la procédure suivante lorsque l'erreur est découverte après avoir entré d'autres données.

在輸入資料之後，如果發現有錯誤時，請用下述程序進行修正。

다른 데이타를 입력한 후 에러가 발견되었을때 다음 수속을 사용하십시오.

Gunakan prosedur berikut apabila kesalahan ditemukan setelah memasukkan data lainnya.

Utilize o seguinte procedimento ao descobrir um erro depois de entrar outros dados.

استخدم الطريقة التالية عند اكتشاف الخطأ بعد ادخال بيانات اخرى.

49 [DATA]	49 [SHIFT] [DEL] 51 [DATA]

- **Correction procedure II**
  Correct input: 130 [×] 31 [DATA]
- **Procedimiento de corrección II**
  Ingreso correcto: 130 [×] 31 [DATA]
- **Procédure de correction II**
  Entrée correcte: 130 [×] 31 [DATA]
- **修改程序 II**
  正確的輸入: 130 [×] 31 [DATA]
- **정정수속 II**
  정정입력 : 130 [×] 31 [DATA]
- **Prosedur koreksi II**
  Input yang benar: 130 [×] 31 [DATA]
- **Procedimento de correção II**
  Entrada correta: 130 [×] 31 [DATA]
- **عملية التصحيح II**
  الدخل الصحيح : 130 [×] 31 [DATA]

Error/Error Erreur/錯誤/에러 Kesalahan/Erro/ خطأ	Correction/Corrección Correction/修正/정정 Koreksi/Correção/ صحيح
120 [×]	[AC] 130 [×] 31 [DATA]
120 [×] 31	[AC] 130 [×] 31 [DATA]

Use the following procedure when the error is discovered after inputting other data.

Utilice el siguiente procedimiento cuando se descubre el error luego de ingresar otros datos.

Utiliser la procédure suivante lorsque l'erreur est découverte après avoir entré d'autres ,données.

在輸入資料之後，如果發現有錯誤時，請用下述程序進行修正。

다른 데이타를 입력한 후 에러가 발견되었을때 다음 수속을 사용하십시오.

Gunakan prosedur berikut apabila kesalahan ditemukan setelah memasukkan data lainnya.

Utilize o seguinte procedimento ao descobrir um erro depois de entrar outros dados.

استخدم الطريقة التالية عند اكتشاف الخطأ بعد ادخال بيانات اخرى.

120 × 30 DATA	120 × 30 SHIFT DEL 130 × 31 DATA